

Identification of interspecific hybrid progenies in sugarcane crop improvement

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Identification of true interspecific hybrid progenies is important to produce commercial sugarcane varieties. Four interspecific hybrid families with 12 progenies each of *Saccharum officinarum* and *Saccharum spontaneum* established in the field in January 2017 were evaluated at the Sugarcane Research Institute, Uda Walawe to identify true hybrids to utilize them in back cross program in sugarcane variety improvement. The characteristics; stalk length, stalk diameter, number of millable stalks per clump, field brix, rind hardness, number of internodes per stalk and stalk weight per clump recorded from each progeny were used for identification of true hybrid progenies. Analysis of variance of the characteristics for hybrid families revealed that there is a sufficient variability among families to undertake family selection. There were significant differences among hybrid families for number of internodes per stalk, field brix, rind hardness, number of stalks per clump, leaf length and leaf width. The family 2 produced by the interspecific cross between Korpi (*S. officinarum*) and IS 76 219 (*S. spontaneum*) has been found superior to other interspecific families in directional breeding of sugarcane. Transmission of characteristics to hybrid progenies by the parents determined through narrow sense heritability was high for field brix (0.88) and rind hardness (0.82) and moderate for leaf width (0.68) and number of internodes per stalks (0.64). There were 10 progenies identified based on the result of cluster analysis as true hybrids progenies for use in the future back crosses in sugarcane crop improvement.

Keywords: Hybridization, Hybrid identification, Inter-specific hybridization, Sugarcane

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